

## CLAIMS

What is claimed is:

1. A water-barrier and drainage system for preventing the penetration of water vapor and ground water into the crawlspace environment of a building, said crawlspace environment having a floor surrounded by a substantially continuous peripheral foundation enclosing said crawlspace environment beneath the building, said system comprising a continuous embossed plastic drainage panel covering the entire floor of the crawlspace to provide a barrier against the penetration of groundwater and water vapor up through the floor and into the air space of the crawlspace, said plastic drainage panel being embossed to provide a plurality of spaced protuberances at the underside thereof forming legs which support the drainage panel spaced from the floor of the crawlspace to provide a water flow space adjacent the floor for the drainage of water and water vapor which penetrates up through the floor of the crawlspace or through the walls of the crawlspace.

2. A water-barrier and drainage system according to claim 1 in which said drainage panel includes vertical extensions which extend vertically up against the interior peripheral foundation to a height above the floor/foundation interface to provide a continuous barrier against the penetration of exterior groundwater through said foundation and water vapor from said floor and into said crawlspace environment while providing a water flow space between the drainage panel and the foundation and floor for the escape of water and water vapor from beneath the drainage panel.

3. A water barrier and drainage system according to claim 1 in which the floor of the crawlspace is a concrete floor.

4. A water barrier and drainage system according to claim 1 in which the floor of the crawlspace is a dirt floor provided with a peripheral water drainage trench adjacent the interior wall of the foundation and beneath the drainage panel to collect and drain any water from the water flow space.

5. A water barrier and drainage system according to claim 4 in which the dirt floor of the crawlspace is further provided with a sump pit, with which the peripheral drainage trench communicates, to drain excessive amounts of ground water thereinto from said water flow space.

6. A water barrier and drainage system according to claim 5 in which said sump pit includes a sump pump and a drain conduit for pumping excessive amounts of ground water from the water floor space.

7. A water barrier and drainage system according to claim 1 comprising an encapsulating system including a continuous sealed plastic liner barrier layer covering the entire drainage panel to provide a barrier against the penetration of groundwater and water vapor through the floor and foundation and into the air space of the crawlspace, said barrier layer having vertical extensions which extend vertically up against the interior peripheral foundation to a height greater than the corresponding ground level at the exterior surface of the

foundation and which are bonded to the interior peripheral foundation by a continuous seal adjacent the upper edges of said extensions to provide a continuous barrier against the penetration of exterior groundwater and water vapor through said foundation into said crawlspace environment.

8. A water barrier and drainage system according to claim 7 in which said plastic liner barrier layer is a multi-ply, fiber-reinforced, durable plastic film laminate.

9. A water barrier and drainage system according to claim 7 in which the water barrier liner is formed from two or more wide strips of barrier layer material having their edges overlapped and united by a continuous seal.

10. A water barrier and drainage system according to claim 7 in which the vertical extensions of the plastic liner barrier layer extend to a height adjacent the top of the interior peripheral foundation and are bonded thereto adjacent the top thereof.

11. A water barrier and drainage system according to claim 7 in which the floor of said crawlspace is a concrete floor.

12. A water barrier and drainage system according to claim 1 in which the foundation wall of the crawlspace is first covered by a plastic foam insulation board, and the edges of the embossed drainage panel covering the floor of the crawlspace are sealed to the insulation board.

13. A water barrier and drainage system according to claim 2 in which the surfaces of the vertical extensions of the drainage panel, opposite the surfaces against the foundation are covered by a plastic foam insulation board.

14. A water barrier and drainage system according to claim 12 further comprising a durable plastic liner barrier layer over the embossed drainage panel on the floor and up over the plastic foam insulation board on the wall of the crawlspace.

15. A water barrier and drainage system according to claim 14 in which the plastic foam insulation board and the embossed drainage panel cover the entire surface of the foundation wall of the crawlspace, up to the top thereof, and the plastic liner barrier layer extends up over the embossed drainage panel and is sealed to the upper edge thereof to encapsulate the crawlspace.